(a)

πcountry(σcontinent=Europe(Countries))

(b)

πcountry(σcontinent=North America(Countries)⨝(σpopulation>1,000,000(Cities)⨝(σis\_capital=yes(Cities))))

(c)

σ(country1.population>country2.population)(ρcountry1(σis\_capital=yes(Cities))ｘ(ρcountry2(σis\_capital=yes(Cities))))

(d)

πcountry(Cities) - πcountry(Cities⨝(σcontinent=Europe(Countries)))

(e)

πcountry, capital, not\_capital(Countries⨝((ρcapital(σis\_capital=yes(Cities))ｘ(ρnot\_capital(σis\_capital=no(Cities))))))